

# SPACE FORCES

## Supporting Today's Joint Force Commander

Lieutenant Colonel Brian K. Anderson, U.S. Air Force; and  
Lieutenant Colonel Robert H. Bogart, U.S. Marine Corps, Retired

**O**PERATION Desert Storm is often referred to as the United States' first "space war." At that time, there was no doctrine for centrally commanding and controlling space forces, and that remains true today. This dilemma has led to many debates on how to remedy the situation.

After more than 11 years of development, Joint Publication (JP) 3-14, *Space Operations*, was published in August 2001, and the concept of joint force space operations authority (JFSOA) was introduced to the joint force commander (JFC). JFSOA's purpose is to provide theater command and control (C2) of space support.

The JP outlines the JFSOA's role as belonging to one of the component commanders. This article suggests that the best answer is to give this support function to the J3's information operations cell. Few debate that when the United States has space-based weapons there will be a need for a joint force space component commander (JFSCC). Here, we will offer an interim command structure that not only serves the JFC today but also allows an easy transition to a JFSCC structure.

### Standards in Terminology

Why are there so many differing opinions on how to lead and direct space forces? Is parochialism at the heart of the differences? Perhaps. We believe, however, the primary source of difference stems from how the military services think about space. At the root of differing space strategies and concepts lies a lack of standard terminology. For instance, U.S. Air Force (USAF) space terms do not align with Department of Defense (DOD) or joint terms. This is important because the USAF operates most of the unclassified space systems that support warfighters, and warfighters must clearly understand space terminology. Terminology affects the

---

*At the root of differing space strategies and concepts lies a lack of standard terminology. . . . Terminology affects the way people think and the way they are trained, organized, and equipped. Key terms with varying definitions within DOD are "space," "space forces," and "space operations." Differences in interpreting these terms have led to various misconceptions.*

---

way people think and the way they are trained, organized, and equipped.

Key terms with varying definitions within DOD are "space," "space forces," and "space operations." Differences in interpreting these terms have led to various misconceptions. A misconception in the USAF is that air and space form one seamless medium. Within this context, space is retained in its status as a force multiplier or support commodity. Another misconception is that space operations and support from space are exactly the same, which they are not. This misconception blurs the line between space operations and certain intelligence functions, particularly collection management. However, no matter what the misconception, the JFC has to deconflict the differences these misconceptions can cause before he can synchronize operations.

**Space defined.** DOD's space policy states that "space is a separate medium like land, sea, and air within which military activities shall be conducted to achieve U.S. national security objectives. The ability to access and utilize space is a vital national interest because many of the activities conducted in the medium are critical to U.S. national security and economic well being."<sup>1</sup> Using this definition, some have proposed that the space medium warrants its

own service.<sup>2</sup> Other mediums have their own service, and space, after all, is a medium of vital national interest.<sup>3</sup> Others have suggested space should have a component command within a joint force command structure. The JFSCC would coordinate space operations and forces for the JFC in a structure similar to the existing air, land, maritime, or special operations component. Most would agree that, although certainly a potential structure for the future, the JFSCC structure could not support the JFC today.

JP 1-02, *DOD Dictionary of Military and Associated Terms*, does not define space. It does, however, define aerospace as “of, or pertaining to, Earth’s envelope of atmosphere and the space above it; two separate entities considered as a single realm for launching, guidance, and control of vehicles that will travel in both entities.”<sup>4</sup> The USAF has adopted this concept as the foundation for its aerospace and space warfare doctrine. USAF doctrine states that air and space constitute a seamless medium and that space capabilities should be fully integrated into air power.<sup>5</sup> Because both air and space provide theaterwide support to all JFC forces and since the USAF operates most space assets, USAF doctrine contends that the joint force air component commander (JFACC) is the natural choice to command and control theater space forces.<sup>6</sup>

DOD space policy and the Report of the Commission to Assess U.S. National Security Space Management and Organization states that space is a separate medium.<sup>7</sup> As such, a C2 structure that fully exploits space is necessary. The U.S. Space Command (USSPACECOM) has developed its own concept for C2 of space forces on this premise.

**Space forces.** DOD’s space policy states that “Space Forces are the space and terrestrial systems, equipment, facilities, organizations, and personnel necessary to access, use, and if directed, control space for national security.”<sup>8</sup> Personnel who access and use space include almost everyone on and above the battlefield. Similarly, USAF doctrine includes intelligence functions in space operations. Draft Air Force Doctrine Document (AFDD) 2-2, *Space Warfare*, states: “The ability of space units to achieve space superiority; to enhance force application; and to collect, process, and disseminate timely information on the enemy’s forces is essential.”<sup>9</sup> Most perspectives lean toward the view of space as a separate service under the C2 of its own service component commander or JFACC. It would take a large infrastructure to C2 all personnel and assets if so organized. We believe that it is more appropriate and

manageable to define space forces by the functions they perform, specifically, space operations.

**Space operations.** DOD’s space policy states that space operations is comprised of four sub-missions:

- *Space control*—“combat and combat support operations to ensure freedom of action in space for

---

*When thinking of space forces in terms of space operations’ sub-missions, there are two key points. First, space forces are not end users of space capabilities; they provide the space capabilities and services that support end users. Second, most space operations’ functions are performed outside the JFC’s area of responsibility.*

---

the United States and its allies and when directed, deny an adversary freedom of action in space. The space control mission area includes surveillance of space; protection of US and friendly space systems; prevention of an adversary’s ability to use space systems and services for purposes hostile to US national security interests; and directly supporting battle management, command, control, communications, and intelligence.”<sup>10</sup>

- *Force enhancement*—“combat support operations to improve the effectiveness of military forces as well as support other intelligence, civil, and commercial users. The force enhancement mission area includes intelligence, surveillance, and reconnaissance; tactical warning and attack assessment; command, control, and communications; position, velocity, time, and navigation; and environmental monitoring.”<sup>11</sup>

- *Force application*—“combat operations in, through, and from space to influence the course and outcome of conflict. The force application mission area includes ballistic missile defense and force projection.”<sup>12</sup>

- *Space support*—“combat service support operations to deploy and sustain military and intelligence systems in space. The space support mission area includes launching and deploying space vehicles, maintaining and sustaining spacecraft on-orbit, and de-orbiting and recovering space vehicles, if required.”<sup>13</sup>

When thinking of space forces in terms of space operations’ sub-missions, there are two key points. First, space forces are not end users of space capabilities; they provide the space capabilities and services that support end users. Second, most space operations’ functions are performed outside the

*Assigning control of space operations to a single component commander may not be in the JFC's best interest. . . . Establishing a component commander for space adds yet another commander in theater with whom the JFC must interface, and that may stovepipe space operations rather than integrate them into joint operational planning. . . . The JFC should control space forces and delegate JFSOA to the J3.*

JFC's area of responsibility (AOR). This is because space forces are best positioned to support a global mission and because the infrastructure is too complex to be moved. Functions such as assured access, space surveillance, protection of space systems, and force enhancement apply.

**USSPACECOM's Role**

Strategists and doctrinaires propose C2 structures for space forces based on how they interpret terminology. They appear to overlook that USSPACECOM, as designated by the 1999 Unified Command Plan, serves as the military focal point for space operations. It clearly states: "USSPACECOM will plan for and employ space forces to execute con-

tinuous military space operations (space control, force enhancement, force application, and space support) during peace, crisis and war, in support of the [National Command Authorities] NCA, [Chairman, Joint Chiefs of Staff] CJCS, Combatant Commands, Component Commands and other agencies, while denying like capability to adversaries."<sup>14</sup> USSPACECOM has developed the *Concept of Operations for Command and Control of Space Forces and Unit Manning Document 38-2, Space Support to Operations*, to show how to direct space forces and execute space operations.<sup>15</sup>

USSPACECOM provides a C2 structure for space forces and space operations through its component commands: Army Space Command (ARSPACE), Naval Space Command (NAVSPACE), and 14th Air Force (SPACEAF). As USSPACECOM's warfighting elements, these components plan for and execute space control, force enhancement, force application, and space support.

The USSPACECOM J3, as delegated by the commander in chief, USSPACECOM (USCINCSPACE), directs space operations.<sup>16</sup> Planning for space forces is centralized at USSPACECOM and carried out through its components. Figure 1 illustrates how USSPACECOM's global C2 structure supports the commander in a theater.

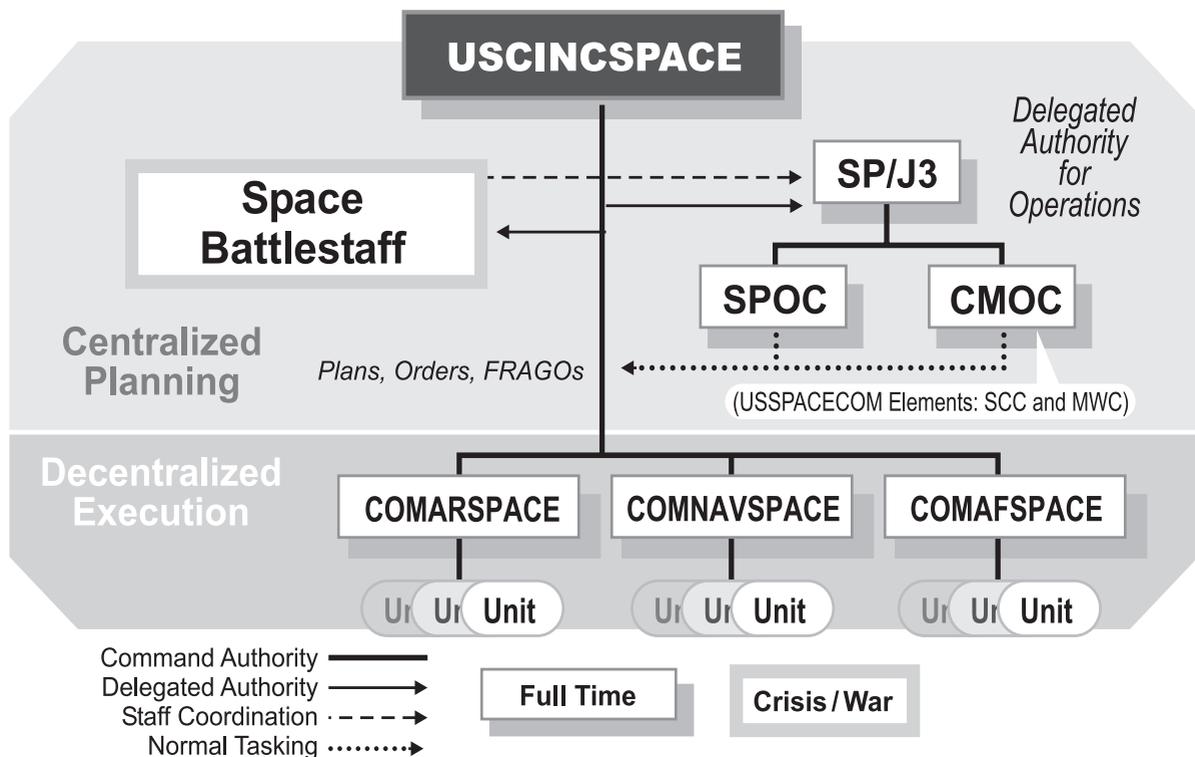


Figure 1. USSPACECOM C2 Structure

The space operations center (SPOC), along with the USSPACECOM battle staff, provides space operations support to the JFC during major exercises and throughout the spectrum of conflict. Since space operations are global missions, what occurs in a supported theater may impact another. Therefore, to keep other commanders in chief (CINC) informed of space operations events, the SPOC is connected with their operations centers through the Global Command and Control System (GCCS) and Intelink. Figure 2 depicts the joint relationship needed to provide space operations support to the theater commander.

**Who's in Charge?**

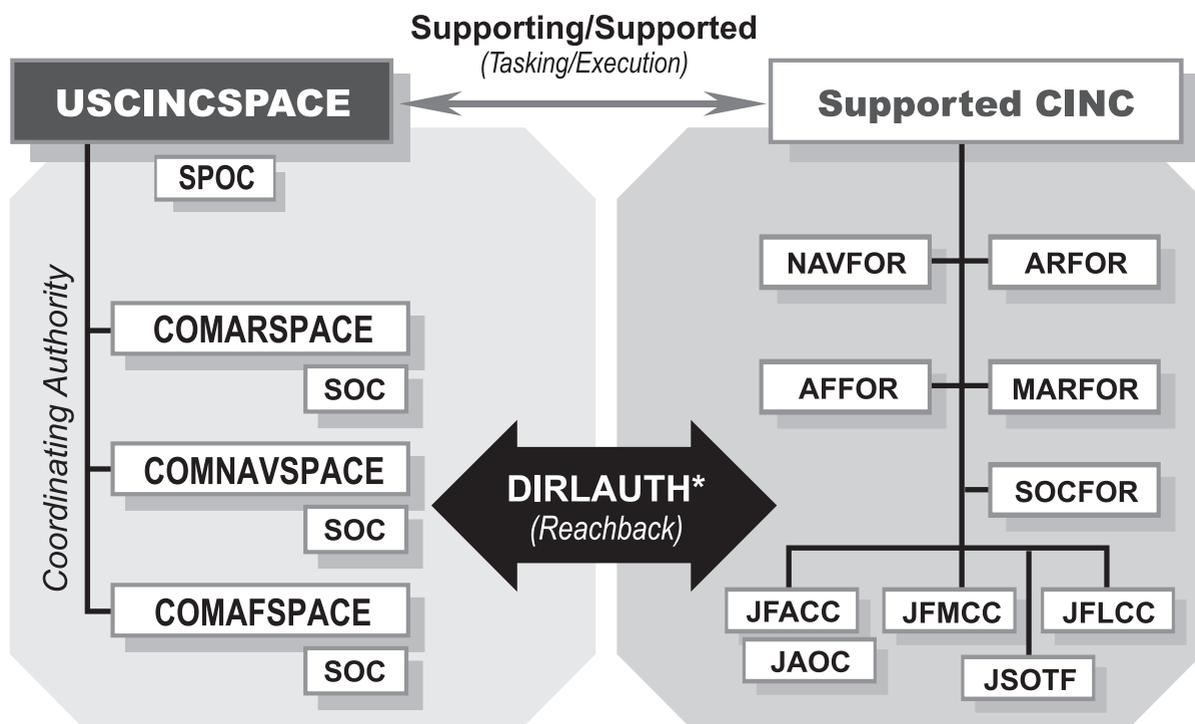
While the C2 structure outside the AOR is well established, the structure inside the AOR is still in question. Where should JFSOA's focus be on space operations in the AOR? The answer is wherever space forces can be exposed to the greatest number of mission areas across the spectrum of operations. Assigning control of space operations to a single component commander may not be in the JFC's best interest. Because space operations support is integral to components' mission areas and because it is in short supply, component commanders must compete for space operations support. Placing space forces under the C2 of a single compo-

*USSPACECOM's component SSTs are organized and trained to meet the space operational needs of their corresponding supported component. For example, the ARSPACE SST supports the joint force land component commander. SSTs primarily focus on space operations sub-missions of force enhancement, assisting the warfighter with weather, communications, navigation, intelligence, and missile warning support.*

nent may isolate space operations support to one medium and lead other component commanders to believe that they are not getting their share of support.

Establishing a component commander for space adds yet another commander in theater with whom the JFC must interface, and that may stovepipe space operations rather than integrate them into joint operational planning. It would enlarge the in-theater infrastructure at a time when the Armed Forces should be reducing high-profile organizations and moving toward a more virtual battlefield.

The best C2 apparatus for in-theater space forces can interface throughout the spectrum of operations and can prioritize space operations for the JFC.



\*Information Sharing, Education, and Planning

Figure 2. Joint Relationships



NASA

***JP 1-02, DOD Dictionary of Military and Associated Terms, does not define space. It does, however, define aerospace as “of, or pertaining to, Earth’s envelope of atmosphere and the space above it; two separate entities considered as a single realm for launching, guidance, and control of vehicles that will travel in both entities.” The USAF has adopted this concept as the foundation for its aerospace and space warfare doctrine.***

Therefore, the JFC should control space forces and delegate JFSOA to the J3. Many will object to this idea because the JFC staff does not execute operations. However, vesting the J3 with JFSOA efficiently prioritizes space operations, does not require a large infrastructure to execute, and allows the J3 to exercise JFSOA across the entire spectrum of operations.

As mentioned earlier, most space operations will be conducted by space forces that do not reside in the theater they actually support. USSPACECOM has already provided a C2 structure to manage this effort. What is needed in theater is orchestration and coordination rather than a C2 structure. This requires an in-theater interface with the USSPACECOM C2 structure external to the theater, a process referred to as reachback. USSPACECOM liaison officers (LNOs), joint space support teams (JSSTs), and component space support teams (SSTs) are postured to fill this requirement.

### **USSPACECOM's Reachback Support**

USSPACECOM assigns LNOs in the grade of O6 to the following unified commands: U.S. Joint Forces Command (USJFCOM), U.S. Central Com-

mand (USCENTCOM), U.S. European Command (USEUCOM), U.S. Pacific Command (USPACOM), and U.S. Special Operations Command (USSOCOM). LNOs have an operational background and significant experience in space-related duties. They normally serve a 3-year tour with the command they support. They understand the space support requirements of the AOR and bring space operations to bear to meet those requirements.<sup>17</sup> They are the primary points of contact between the supported CINC's staff and USSPACECOM. LNOs work in the supported CINC's operations directorate and ensure that space operations capabilities are integrated into planning, operations, training, and execution.

During a crisis, USSPACECOM LNOs receive augmentation from geographically

dedicated JSSTs and component SSTs to accomplish their missions. LNOs and SSTs provide the liaison among the supported CINC, joint task force (JTF), component command staffs, and USSPACECOM. They also provide space expertise, recommendations, and assistance to the supported commander such as recommending space system targets and priorities; facilitating theater ballistic missile warnings; providing information on space systems' status and impact to current operations; space considerations to intelligence preparation of the battlefield; and developing support plans during deliberate and crisis-action planning.<sup>18</sup>

JSSTs and component SSTs provide space operations support to unified, subunified, JTF, and component commanders. SSTs working with the USSPACECOM LNOs address the supported command's space operations requirements by submitting situation reports to the USSPACECOM SPOC. This is how the reachback process works. It is the means by which the supported theater is connected to the USSPACECOM space forces' C2 structure. The SPOC is USSPACECOM's primary SPOC, providing 24-hour global and regional situation awareness for USCINCSpace.

When the tempo of operations exceeds the SPOC team's on-duty capability, it will be directed to activate the battle staff. The battle staff is the primary instrument for crisis-action planning, including preparing operation plans and orders. It consists of a command group and a crisis-response cell (CRC) or a crisis-action team (CAT) as the situation dictates. Both the CRC and CAT contain current and future operations teams. The SPOC coordinates assigned responsibilities with higher headquarters, supported commands, USSPACECOM's battle staff, SSTs, the Cheyenne Mountain Operations Center, and USSPACECOM's component operations centers.<sup>19</sup>

USSPACECOM's component SSTs are organized and trained to meet the space operational needs of their corresponding supported components. For example, the ARSPACE SST supports the joint force land component commander. SSTs primarily focus on the space operations sub-missions of force enhancement, assisting the warfighter with weather, communications, navigation, intelligence, and missile warning support.<sup>20</sup>

JSSTs support the unified commands and augment the LNOs. Each JSST has three core members and is augmented with additional expertise as the mission dictates. Both JSSTs and SSTs coordinate with the LNO and communicate their requirements to their respective parent command operations centers. LNOs and JSSTs coordinate with USSPACECOM directorates, SPOCs, and SSTs. All requirements reach the SPOC for information or action. In other words, the JTF commander and component commanders receive their space operations support primarily through the reachback process in coordination with the LNO. There is not a large contingent of space forces in theater requiring a C2 structure.

### **Information Operations**

Assigning the LNO as the focal point for space operations and space forces within a theater allows space forces to support an array of mission areas, including information operations (IO). Today, space is the key enabler of IO, which "integrates the broad range of potential IO actions and activities that help contribute to the JFC's desired end state in an AOR."<sup>21</sup> The JFC usually assigns control of the cell to his J3. As part of the J3, the LNO supports the IO cell. The LNO interfaces with representatives from the JFC components, all in-theater IO disciplines, the primary staff, and the Joint Targeting Control Board, allowing the JFC to orchestrate and

coordinate space operations and space force planning across the spectrum of operations.

Designating the LNO as the theater focal point for space forces and space operations gives the JFC a lean, efficient, flexible structure with which to

---

*Assigning the LNO as the focal point for space operations and space forces within a theater allows space forces to support an array of mission areas, including information operations (IO). Today, space is the key enabler of IO, which "integrates the broad range of potential IO actions and activities that help contribute to the JFC's desired end state in an AOR."*

---

maximize the use of space forces and to accomplish space operation objectives. Deliberating over who is in charge and reorganizing to accommodate the mission does not get the job done today, nor does it prepare for tomorrow.

Planning for tomorrow will require some revolutionary thinking. Today, most strategists continue to perceive space as a force multiplier. Even the USAF's "aerospace concept" integrates space into air power to make air power more lethal.<sup>22</sup> Graybeards speak of space capabilities as evolving; yet, thinking about space has moved little. When viewed as a support commodity, space is not revolutionary or even evolutionary. Revolutionary thinking requires that technology be pulled in the direction we want it to evolve, not the other way around.

For example, space operations executed to gain space superiority or to support IO may have the potential today to be a decisive force. Writer Timothy Thomas uses a good example: "General Wesley K. Clark, Supreme Allied Commander Europe, reportedly stunned a recent session of the Senate Armed Services Committee when he called for a complete rethink of Western strategy and questioned the need for the aerial assault on Serbia. General Clark noted that NATO could have used legal means to block the Danube and the Adriatic ports and could have used methods to isolate [Slobodan] Milosevic and his political parties electronically. If implemented and augmented with other measures, Clark added, the military instrument might have never been used."<sup>23</sup>

The United States is not the only one becoming acutely aware of the potential of space power. Indian Chief of Air Staff, Air Chief Marshall A.Y. Tipnis recently stated, "Though air power had

***Today, most strategists continue to perceive space as a force multiplier. Even the USAF's "aerospace concept" integrates space into air power to make air power more lethal. Graybeards speak of space capabilities as evolving; yet, thinking about space has moved little. When viewed as a support commodity, space is not revolutionary or even evolutionary.***

become the overwhelmingly predominant factor in deciding the outcome of any conflict . . . information superiority could well relegate air superiority to the second position. . . . Air superiority to information superiority to space superiority is a logical progression for nations vying with one another. Imagine how soon victory will be to the side which denies existing space application to his adversary."<sup>24</sup>

Space operations will continue to assume a more dominant role. JFCs should begin to think space superiority before all else, and space campaign plans should be developed at the theater level to achieve this end. Recently, the Commission to Assess U.S. National Security Space Management and Organi-

zation stated in its report that "appropriate investments in space-based capabilities would enable the DOD to pursue enhanced protection/defensive measures, prevention and negation systems and rapid, long-range power-projection capabilities."<sup>25</sup> When these capabilities are obtained and deployed, the space medium will assume a different complexion. Most likely, the first course of action in any campaign will be to gain space superiority, establishing the high ground from which to inflict our will on an adversary.

The C2 structure we have espoused for space forces—the orchestration and coordination of space forces concept—provides a come-as-you-are structure that is dynamic yet simple. This C2 structure lends itself to an environment that is moving ever closer to the virtual battlefield by executing extratheater operations with minimum presence for intertheater coordination. By operating under the JFC/J3, through the IO cell, space operations capabilities are visible to virtually every commodity area supporting the commander's efforts. Thus, scarce space forces can be prioritized to support the commander's courses of action. This C2 structure is well-organized to meet today's requirements yet agile enough to adjust for tomorrow when space may be the supported warfighting medium. **MR**

#### NOTES

1. Department of Defense Directive (DODD) 3100.10, *The DOD Space Policy* (Washington, DC: U.S. Government Printing Office [GPO], 9 July 1999), 2.
2. Report of the Commission to Assess U.S. National Security, Space Management, and Organization (Fort Meade, MD: U.S. National Security Agency, 11 January 2001).
3. The White House, "National Security for a New Century" (Washington, DC: October 1999).
4. Joint Chiefs of Staff, Joint Publication (JP) 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, DC: GPO, 10 June 1998).
5. U.S. Air Force, Air Force Doctrine Document (AFDD) 2, *Organization and Employment of Aerospace Power* (Washington, DC: GPO, 17 February 2000), 133; Draft AFDD 2-2, *Space Warfare* (Washington, DC: GPO), 3.
6. Draft AFDD 2-2, 25.
7. Report of the Commission to Assess U.S. National Security, Space Management, and Organization.
8. DODD 3100.10, 16.
9. Draft AFDD 2-2.
10. DODD 3100.10.
11. *Ibid.*
12. *Ibid.*
13. *Ibid.*

14. Joint Chiefs of Staff, 1999 Unified Command Plan (Washington, DC: Chairman of the Joint Chiefs of Staff, 29 September 1999), 13.
15. USSPACECOM Concept of Operations for Command and Control of Space Forces (Peterson Air Force Base, CO: USSPACECOM, 21 October 1998); USCINCSpace Unit Manning Document (UMD) 38-2, *Space Support to Operations* (Washington, DC: GPO, 22 October 1999).
16. USSPACECOM Concept of Operations for Command and Control of Space Forces, 8.
17. UMD 38-2.
18. *Ibid.*, 4, 5.
19. *Ibid.*, 1.
20. *Ibid.*, 2.
21. JP 3-13, *Joint Doctrine for Information Operations* (Washington, DC: GPO, 9 October 1998), IV-1.
22. AFDD 2-2, 7.
23. Timothy L. Thomas, "Kosovo and the Current Myth of Information Superiority," *Parameters* (Spring 2000), 1.
24. Speech presented by Indian Chief of Air Staff, Air Chief Marshal A.Y. Tipnis, 7 February 2001, Bangalore, India, at the opening session of Aero India 2001.
25. Report of the Commission to Assess U.S. National Security, Space Management, and Organization.

*Lieutenant Colonel Brian K. Anderson, U.S. Air Force, is the chief of Space Control Joint Policy and Doctrine, U.S. Army Space Command, Peterson Air Force Base (AFB), Colorado. He received a B.S. from Purdue University, an M.S. from Florida Institute of Technology, and a Ph.D. from the University of Alabama. He is a graduate of the Air Command and Staff College and the School of Advanced Airpower Studies. He has served in various command and staff positions, including Bomber Defensive System test manager, Wright Patterson AFB, Ohio; chief, Commander's Action Group, Arnold AFB, Tennessee; chief, Aerospace Test Facility Section, Arnold AFB; and chief, Space Shuttle Payloads Branch, Eastern Test Range, Patrick AFB, Florida.*

*Lieutenant Colonel Robert H. Bogart, U.S. Marine Corps, Retired, is a senior analyst with the Scitor Corporation, Colorado Springs, Colorado. He received a B.A. from the University of Louisiana and master's degrees from Salve Regina College and the Naval War College. He is a graduate of the Air War College, Naval War College, and Command and Staff College. He has also served as a space and defense systems analyst, Directorate of Operations, Headquarters, U.S. Air Force Space Command, Peterson Air Force Base (AFB), Colorado; and chief, Foreign Space and Strategic Missile Division, North American Aerospace Defense Command, U.S. Space Command, Peterson AFB.*